but the split disappears temporarily before the metaphase, when it is again evident. During late prophase and metaphase the chromosomes often show a distinctly paired arrangement. In telophase there is a massing at each pole, after which the chromosomes separate and become joined by anastomoses. Considerable variation in chromosome number is shown; the usual number is 15. The nuclei occasionally show certain characters of heterotypic mitosis.—L. W. SHARP.

Poison weed.—Larkspurs have always had the reputation of being poisonous, but it seems that only in North America have they been important in causing losses of stock. MARSH and his associates[24] have investigated the poisoning due to larkspur in Colorado, and presumably the conditions are the same in other mountain cattle ranges of the West. The larkspurs are grouped as tall and low larkspurs, *Delphinium Barbeyi* representing the first group, and *D. Nelsonii* the latter. These forms cause the loss of a great number of cattle, but horses and sheep are not injured by grazing on larkspur areas; and cattle are not injured if prevented from grazing on such areas until the second week of July. The next problem is to discover the specific poison.—J. M. C.

Xenia.—Having discovered instances of xenia in wheat, BLARINGHEM[25] sought to determine whether the vigorous development of hybrid enbryo and endosperm ever causes a change in the character of the maternal tissue that surrounds them. On crossing a comparatively small wheat, known as *Triticum turgidum gentile* Al. var. Normandy, with a larger type, *Triticum vulgare lutescens* hybrid no. 126 of the Hohenheim collection, 16 hybrid seeds approaching the paternal variety in size were obtained. This phenomenon is interpreted as xenia in the original sense of the term, though it seems probable that it is simply a stretching of the pericarp due to a large hybrid embryo and endosperm.—E. M. EAST.

Artificial cell structure.—In a series of interesting experiments, W. MAGNUS[26] has produced, from paraffin, beeswax, and other substances, various structures which bear a striking resemblance to cells and tissues. The paraffin, with a melting point of about 74° C., was poured upon mercury which had been heated to 78° C. and allowed to cool at room temperature. While this is only the beginning of the investigation, the writer thinks he has already shown that through the action of purely physical forces structures can be produced which look like

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[24] MARSH, C. DWIGHT, CLAWSON, A. B., and MARSH, HADLEIGH, Larkspur or "poison weed." U.S. Dept. Agric., Bur.,Plant Ind., Farmer's Bull. 531. 1913.

[25] BLARINGHEM, L., L'influence du pollen visible sur l'organisme maternal; découverte de la xénie chez le blé. Bull. Soc. Bot. France **60**: 187–193. 1913.

[26] MAGNUS, WERNER, Über zellenformige Selbstdifferenzierung aus flüssiger Materie. Ber. Deutsch. Bot. Gesells. **31**: 290–303. *pl. 13*. 1913.

cells. Further work is expected to show to what extent the physical forces concerned in the living and inorganic material are identical.—CHARLES J. CHAMBERLAIN.

Ovulate flower of Gnetum.—The publication of Miss BERRIDGE's paper[27] on the ovulate strobilus of *Gnetum Gnemon*, in which she gave evidence for the conclusion that the ovule was "primitively surrounded by a whorl of male flowers," has called out a paper by LIGNIER and TISON[28] upon the same structure. They have found material that seems to indicate that the "third integument" of the ovule is a modified axis of inflorescence that bore an axillary ovule; and that occasionally an axillary group of staminate flowers is present, which indicates a connection with *Welwitschia*.—J. M. C.

Beech forest on chalk and on schist.—Comparing the English beech forests on chalk with the French on schist SKENE[29] finds that they are exactly similar ecologically, and that scarcely a member of the latter is a calcifugous plant, while scarcely a single member of the former is a calcicolous plant. Topographically there is no distinction between the two types. This leads SKENE to question the accuracy of placing the two forests in different formations according to the classification adopted by British ecologists.—GEO. D. FULLER.

A bibliography of mitosis.—A very useful list of works on meiosis and somatic mitosis in the angiosperms since 1880 has been compiled by PICARD.[30] The forms are arranged according to systematic position. Although the author has not attempted to make the citations on the individual plants exhaustive, the 300 and more citations given justify him in his belief that from the list one can obtain reference to all the literature of the subject.—L. W. SHARP.

Embryogeny of the Ranunculaceae.—In continuing his studies of the Ranunculaceae, SOUÈGES[31] has described the development of the embryo of *Ficaria ranunculoides*, including some interesting cytological details.—J. M. C.

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[27] See BOT. GAZ. **55**:172. 1913.

[28] LIGNIER, O., et TISON, A., L'ovule tritégumenté des *Gnetum* est probablement un axe d'inflorescence. Bull. Soc. Bot. France **60**:64–72. *figs. 5*. 1913.

[29] SKENE, MACGREGOR, The relation of the beech forest to edaphic factors. Jour. Ecol. **1**:94–96. 1913.

[30] PICARD, M., A bibliography of works on meiosis and somatic mitosis in the angiosperms. Bull. Torr. Bot. Club **40**:575–590. 1913.

[31] SOUÈGES, R., Recherches sur l'embryogénie des Renonculacées. Bull. Soc. Bot. France **60**:150–157. *pl. 11. figs. 288–315*. 1913.